

OpenArray™ Genotyping Analysis

OpenArray™ SNP data analysis in TaqMan™ Genotyper™ Software

Pub. No. MAN0014352 Rev. A.0

 **WARNING!** Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from thermofisher.com/support.

This document is intended as a benchtop reference for experienced users. See “Related documentation” on page 2 for resources for detailed instructions and troubleshooting.

Analyze results in TaqMan™ Genotyper™ Software

1. In Genotyper™ Software, click **Create Study from Template**, then select and open the desired template (.lat).
Note: If you have not created a template, see “Create a study template” on page 1.
2. In the Workflow Menu pane, select **Setup ▶ Experiments**.
3. Click **Import**, then select and import one or more OpenArray™ experiment files (.eds).
4. Click **Analyze**.
5. Inspect the call data for the SNP assay in the scatter plot.
Refer to the *Pharmacogenomics Experiments User Guide* (Pub. no. MAN0009612) or the *TaqMan™ Genotyper™ Software Getting Started Guide* (Pub. no. 4448637) for detailed instructions.
6. (Optional) If desired, manually assign the genotype: select the sample(s), right-click, then select the genotype.
7. Select the Inspected checkbox next to the assay, then click **Save**.
8. Repeat the inspection for each SNP assay.
9. In the Workflow Menu pane, select **Export ▶ Analysis Data**.
10. In the Export Study Properties pane:
 - Select **Analysis Results ▶ Advanced**.
 - Select **One File**.
 - Enter the filename and location, and select (*.txt).
11. Click **Export preview**, then click **Start Export** in the new window.

One-time procedures

Create a study template

If you will use a Reference Panel, generate the Reference Panel before creating the study template, so that the Reference Panel can be imported into the template.

If necessary, first download the Assay Information File (AIF) from www.thermofisher.com/OA-platefiles.

1. In the TaqMan™ Genotyper™ Software Home screen, click **Create Study**.
2. In the Workflow Menu pane, select **Setup ▶ Properties**, then enter the study properties.
 - For Instrument Type, select **QuantStudio™ 12K Flex Real-Time PCR System**.
 - For Experiment Type, select **Real-time**.
3. In the Workflow Menu pane, select **Setup ▶ Assays**.
4. Click **Import**, then select and import the Assay Information File (AIF).
5. (Optional) Import the Reference Panel:
 - a. In the Workflow Menu pane, select **Setup ▶ References**.
 - b. Click **Import**, then select and import the Reference Panel file of interest.
6. Select **File ▶ Generate Template**, enter a template name (.edt), then save the template in the desired location.

(Optional) Generate a Reference Panel

For best results, generate a new Reference Panel for each lot of OpenArray™ plates.

If necessary, first create a study containing data that will be used as reference samples. Set **QuantStudio™ 12K Flex Real-Time PCR System** for Instrument Type, and **Real-time** for Experiment Type in the study properties.

1. In TaqMan™ Genotyper™ Software, open the study that contains data points to be used as reference samples.
2. In the Workflow Menu pane, select **Analysis ▶ Results**.

3. Click-drag in the scatter plot to select one or more data points.
Select data points for each homozygous genotype (FAM™ or VIC™) and the heterozygous genotype.
4. Right-click in the scatter plot, then select **Tag for Ref Panel**.
5. Repeat the selection and tag steps for additional data points.
6. Confirm that the correct samples have been tagged as reference samples in the Results table.
In the Results tab, **Reference Sample** must be checked in the **View** dropdown list to view the tags.
7. Repeat the data point selection, tag, and confirmation steps for each SNP assay of interest.
8. Select **File ▶ Save**.
9. Select **File ▶ Generate Reference Panel**, enter a name for the panel and save the file (.lap) to the desired location.

(Optional) Add samples to an existing Reference Panel

During analysis in Genotyper™ Software, you can add samples to an existing Reference Panel.

The Reference Panel must already be imported into the study containing samples that will be added to the Reference Panel.

1. In the scatter plot of the study, select data points for the samples of interest, right-click in the plot, then select **Tag for Ref Panel**.
2. Select **File ▶ Save**.
3. Select **File ▶ Generate Reference Panel**, enter a name for the panel and save the file (.lap) to the desired location.

Related documentation

Title	Pub. no.
<i>Pharmacogenomics Experiments User Guide</i>	MAN0009612
<i>TaqMan™ Genotyper™ Software Getting Started Guide</i>	4448637
<i>TaqMan™ OpenArray™ Genotyping Troubleshooting Guide</i>	MAN0011115

The information in this guide is subject to change without notice.

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